Harvesting Savings from Commonality

Donna McWaters
KARMA Project
Program Parts Management
The Boeing Company
Phantom Works Division

The Boeing Standard Parts Database

- Aspect eXplore Database
- All Purchased Standard Parts (600,000 parts)
  - Used anywhere in the company
  - High level of technical parametric detail
  - Built from Bill of Material records and part documentation
- Used to identify similar items with different numbers
- Used as a Preferred Parts Selection tool for new designs

Presentation Overview

- Project History
- Reasons for an Enterprise Solution
- Harvesting Savings
- Best Practices & Lessons Learned
- Questions and Answers

Project History

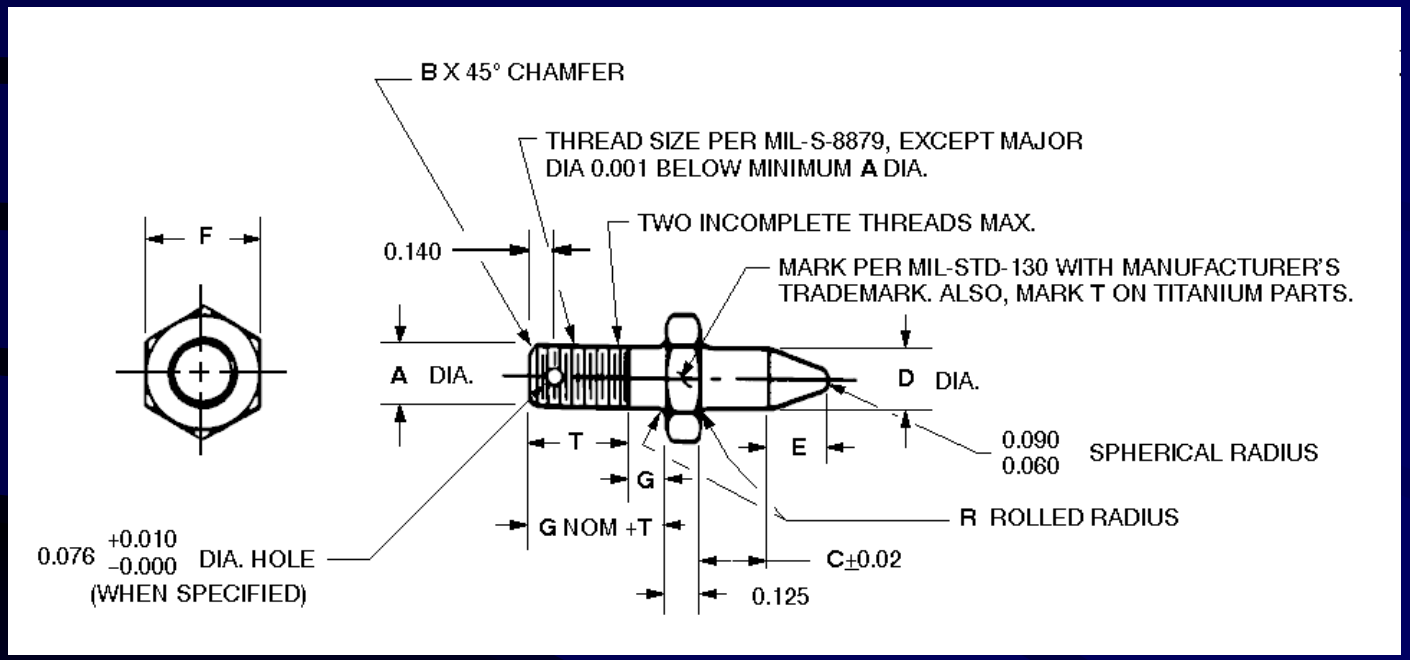
- 1993 - Rockwell Defense Electronics Group chooses Aspect Component Information System
- 1995 - McDonnell Douglas Corporation chooses CADIS
- 1996 - Rockwell sells Autonetics and four other aerospace divisions to Boeing
- 1997 - Hughes Satellite Systems selects Aspect
- 1997 - McDonnell Douglas merges with Boeing
- 1997 - The Internet explodes on the scene
- 1998 - Aspect acquires CADIS
- 1998 - Boeing commits to enterprise Aspect solution
- 1999 - Aspect acquires TacTech (used by everyone)
- 2000 - Aspect merges with i2
- 2000 - Hughes sells satellite business to Boeing
- 2001 - Boeing completes data gathering for CPIMS system
- 2001 - Commodity Team pilot projects prove savings
- 2002 - Hughes division (BSS) negotiates system integration with CPIMS

Why Did We Do It?

- Competition is strong in Commercial Aircraft
- Military business base is declining
- Future products in all business groups must be LEAN to win/survive
- Boeing moving into product support business
- We have to share, cooperate, learn from each other, and leverage the enterprise to succeed

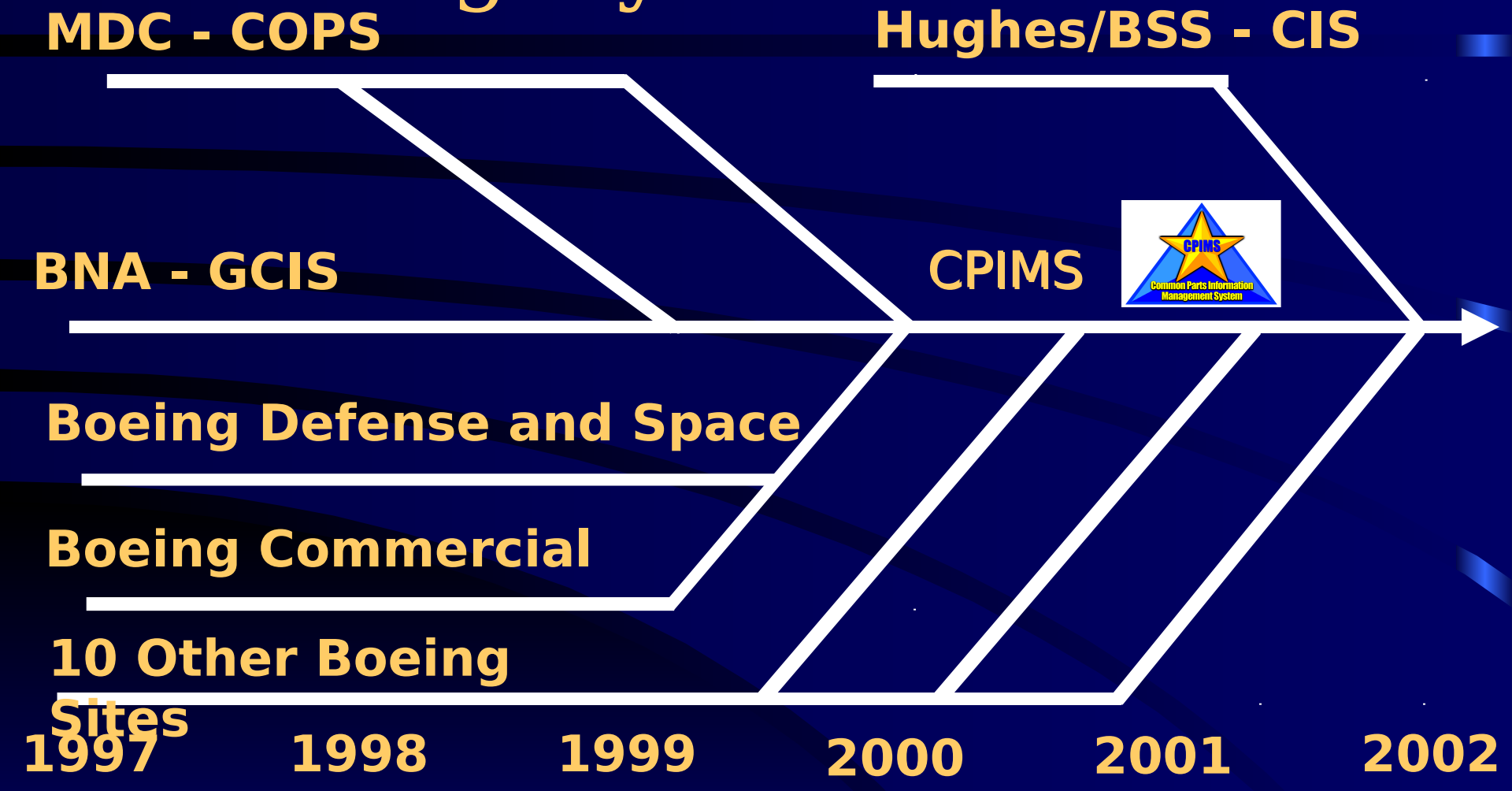
Example: Index Pin

The Boeing Company purchases this same item under 4 different part numbers

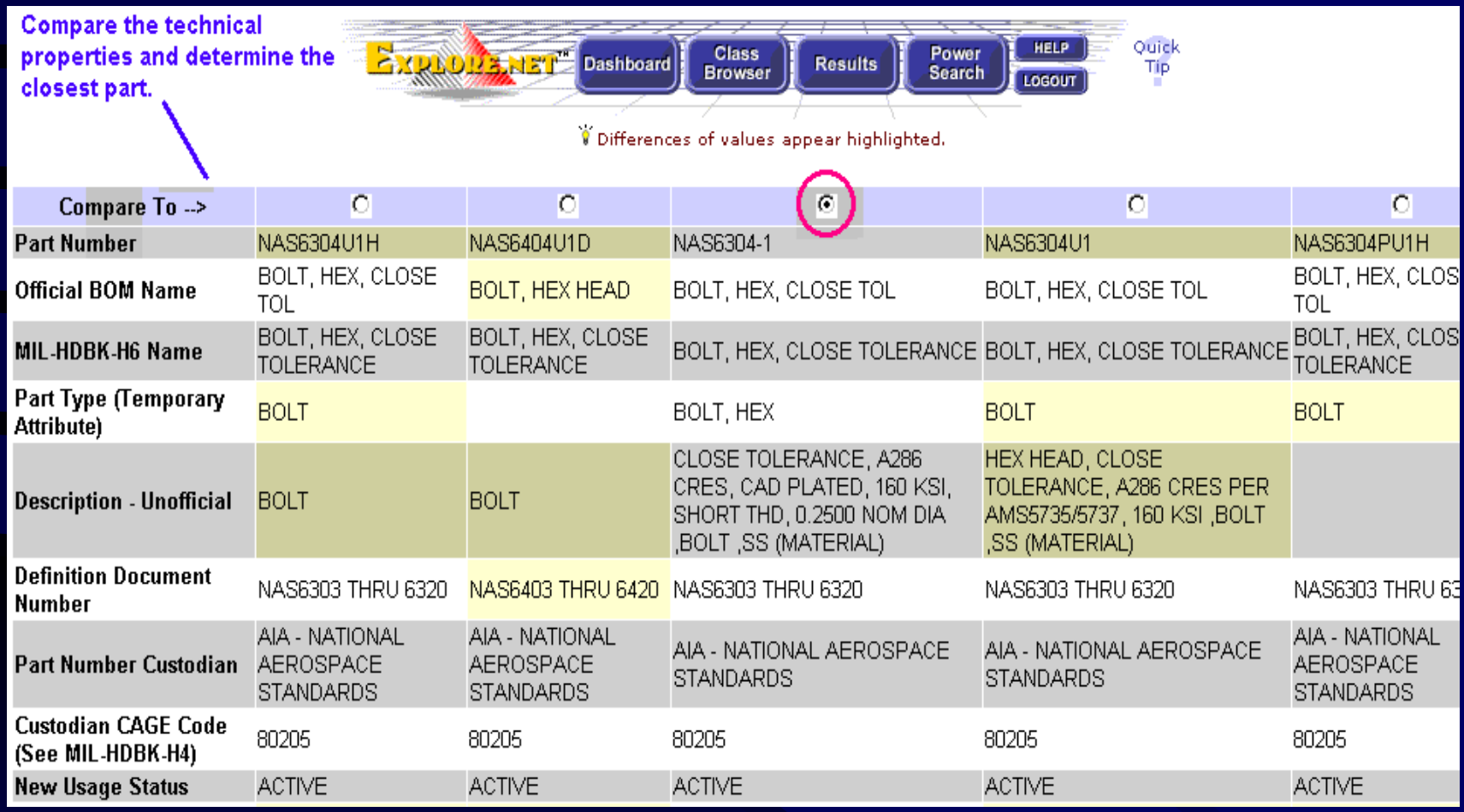


- Anaheim NAS 574
- St. Louis 3M943
- Long Beach 3D0061
- Mesa HS5678

Legacy Transition

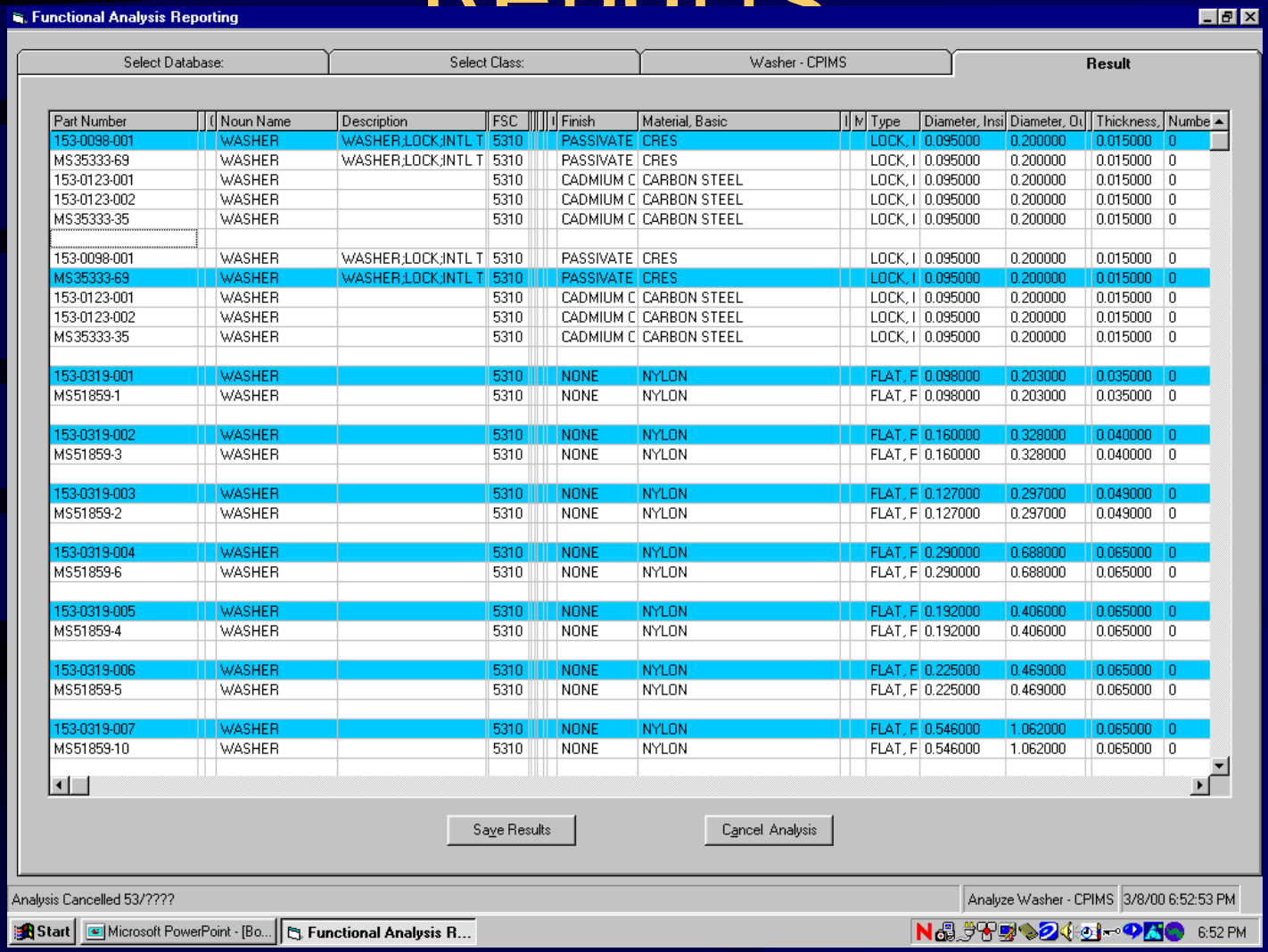


Explore.net



Compare To -->					
Part Number	NAS6304U1H	NAS6404U1D	NAS6304-1	NAS6304U1	NAS6304PU1H
Official BOM Name	BOLT, HEX, CLOSE TOL	BOLT, HEX HEAD	BOLT, HEX, CLOSE TOL	BOLT, HEX, CLOSE TOL	BOLT, HEX, CLOS TOL
MIL-HDBK-H6 Name	BOLT, HEX, CLOSE TOLERANCE	BOLT, HEX, CLOSE TOLERANCE	BOLT, HEX, CLOSE TOLERANCE	BOLT, HEX, CLOSE TOLERANCE	BOLT, HEX, CLOS TOLERANCE
Part Type (Temporary Attribute)	BOLT		BOLT, HEX	BOLT	BOLT
Description - Unofficial	BOLT	BOLT	CLOSE TOLERANCE, A286 CRES, CAD PLATED, 160 KSI, SHORT THD, 0.2500 NOM DIA ,BOLT ,SS (MATERIAL)	HEX HEAD, CLOSE TOLERANCE, A286 CRES PER AMS5735/5737, 160 KSI ,BOLT ,SS (MATERIAL)	
Definition Document Number	NAS6303 THRU 6320	NAS6403 THRU 6420	NAS6303 THRU 6320	NAS6303 THRU 6320	NAS6303 THRU 63
Part Number Custodian	AIA - NATIONAL AEROSPACE STANDARDS	AIA - NATIONAL AEROSPACE STANDARDS	AIA - NATIONAL AEROSPACE STANDARDS	AIA - NATIONAL AEROSPACE STANDARDS	AIA - NATIONAL AEROSPACE STANDARDS
Custodian CAGE Code (See MIL-HDBK-H4)	80205	80205	80205	80205	80205
New Usage Status	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE

Duplicate Analysis Reports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Select Class:
Washer - CPIMS
Result
Part Number | Noun Name | Description | FSC | Finish | Material, Basic | Type | Diameter, Insi | Diameter, Ou | Thickness, | Numbe
153-0098-001 | WASHER | WASHER;LOCK;INTL T | 5310 | PASSIVATE | CRES | LOCK, I | 0.095000 | 0.200000 | 0.015000 | 0
MS35333-69 | WASHER | WASHER;LOCK;INTL T | 5310 | PASSIVATE | CRES | LOCK, I | 0.095000 | 0.200000 | 0.015000 | 0
153-0123-001 | WASHER | | 5310 | CADMIUM C | CARBON STEEL | LOCK, I | 0.095000 | 0.200000 | 0.015000 | 0
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153-0123-001 | WASHER | | 5310 | CADMIUM C | CARBON STEEL | LOCK, I | 0.095000 | 0.200000 | 0.015000 | 0
153-0123-002 | WASHER | | 5310 | CADMIUM C | CARBON STEEL | LOCK, I | 0.095000 | 0.200000 | 0.015000 | 0
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Functional Analysis R...
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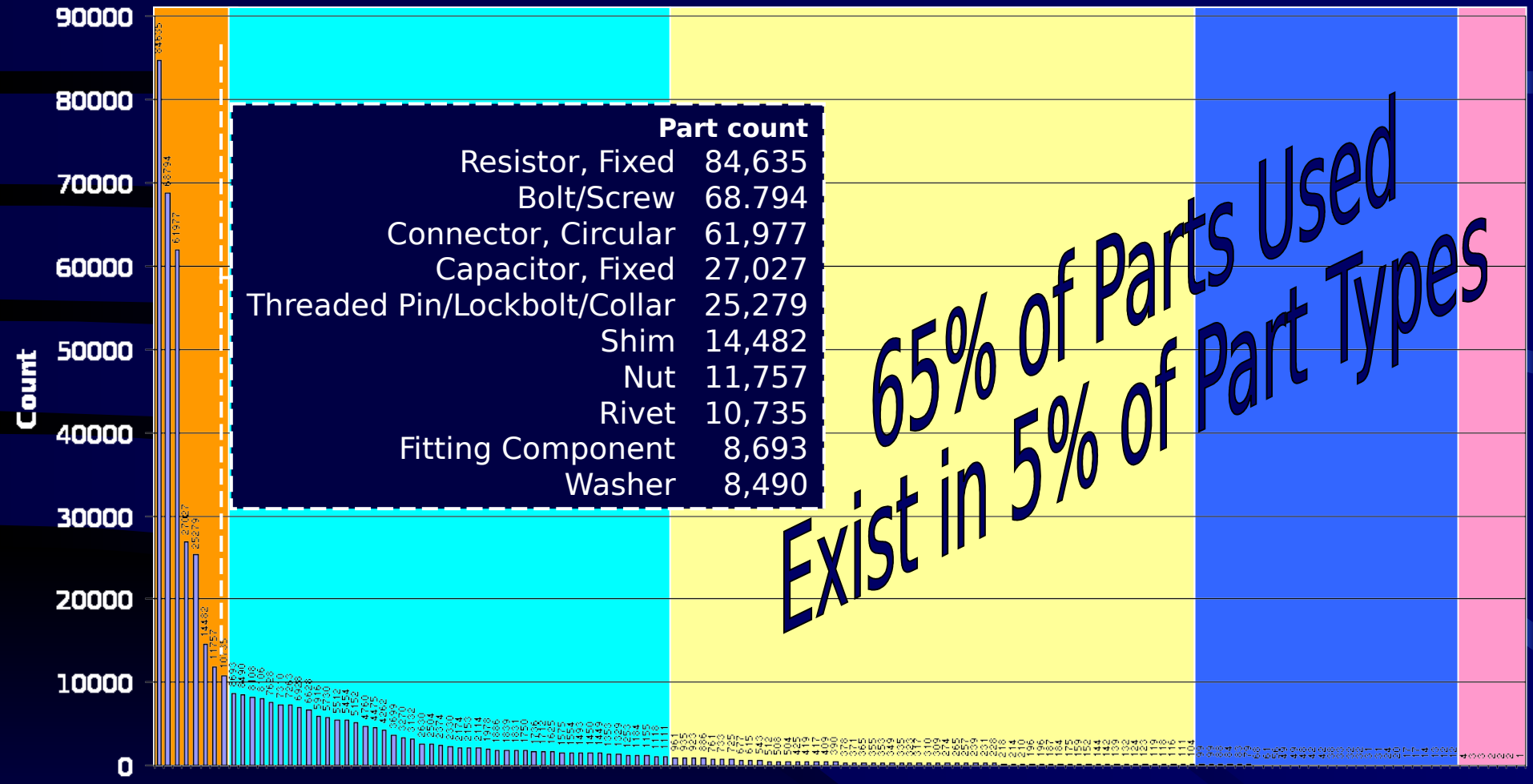
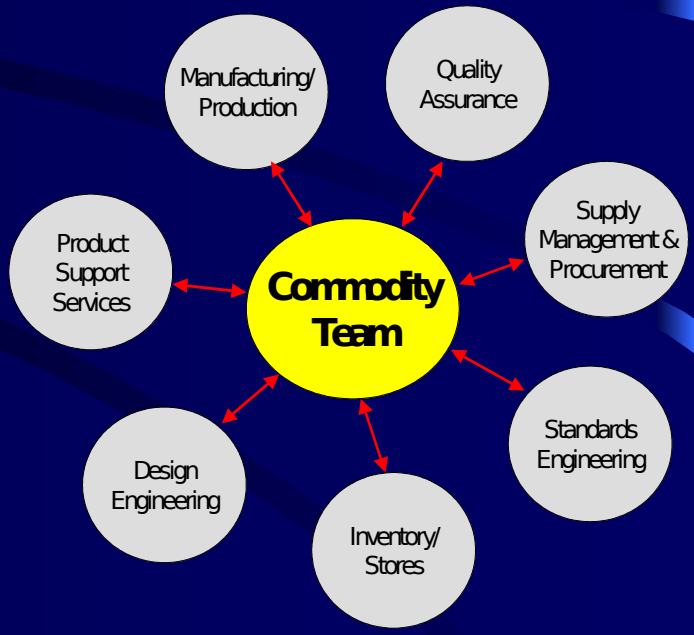
Now They Tell Me!



Harvesting Savings

- Databases don’t save money - People save money
- Four cross-functional Commodity Teams established
- i2 database provides visibility of candidates for savings and target pricing
- Part Proliferation Metrics
- New parts control process
  - justify cost of new part
- Preferred Parts List compliance



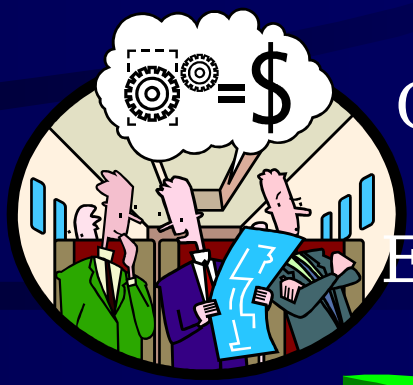
Commodity Standardization

Type	Description	Implementation
I	**Similar Prices for Similar Parts/Materials**	• Requires Engineering Support • No engineering changes • Corrects pricing anomalies & leverages volume
II	**Consolidation on Existing Programs**	• Engineering harmonization • Supercession required • Leverages high volume buys • Reduces inventory set-up costs • Enables inventory transfers
III	**Standardization for Future Programs**	• Engineering harmonization • Enables common qualification & test data • Enables high volume buys • Enables inventory reduction • Enables inventory transfers • Enables common design manuals

Low Hanging Fruit Savings

- Engineering analysis complete to enable 15% savings over 10 years in procurement costs on a single fastener family.
- Additional Estimated Savings Potential of:
  - Fasteners (5%)
  - Electrical Parts (15%)
  - Wire & Wire Bundles (15%)
- Typical new part life cycle is 20 years

Parts Technical Data

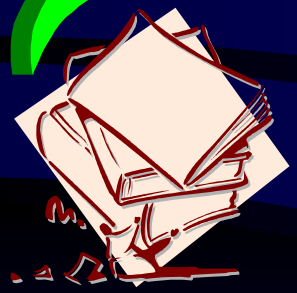


Commodity Team Engineering Analysis

CPIMS

Common Parts Information Management System

Similar Prices for Similar Parts Reports



Boeing Parts Lists

PRICE Reduced

Informed Supplier Negotiations

Design Reuse & Standardization Savings

- The Boeing Company releases thousands of part designs/month
- The non-recurring cost of a new part introduction is roughly $5000
- A 5% increase in reuse adds up quickly
- Great opportunity for savings in a big company that has grown through acquisition and merger

Best Practices & Lessons Learned

- To be champions of culture change
  - Need visible Executive support
  - Culture change requires repeated advertisement
  - Lots of other changes have to occur to transform a company
  - Don’t try to fight history - Go with early adopters
  - METRICS DRIVE BEHAVIOR
- Lots of benchmarking other companies
  - i2UG Directions Conference
  - Contacts within the i2 User Group and Aspect SIG
- Consider 80/20 rule before doing it all
- Data is the biggest cost in development and in maintenance

We Must Be Doing Something Right!

Questions and Answers